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TI Calcium sodium silicate glass compositions, hollow  
microspheres obtained from the glass, and process for their  
manufacture

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SO Fr. Demande, 17 pp.

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DT Patent

LA French

IC ICM C03C003-089

CC 57-1 (Ceramics)

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PI	FR 2671072	A1	19920703	FR 1990-14135	19901114
	FR 2671072	B1	19931203		
PRAI	FR 1990-14135		19901114		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	FR 2671072	ICM	C03C003-089
		IPCI	C03C0003-089 [ICM,5]; C03C0003-076 [ICM,5,C*]
		IPCR	C03B0019-00 [I,C*]; C03B0019-10 [I,A]; C03C0003-076 [I,C*]; C03C0003-093 [I,A]; C03C0011-00 [I,C*]; C03C0011-00 [I,A]
		ECLA	C03B019/10C2; C03C003/093; C03C011/00B

AB The glass contains SiO<sub>2</sub> 55-80, B<sub>2</sub>O<sub>3</sub> 5-15, Al<sub>2</sub>O<sub>3</sub> 3-8, Li<sub>2</sub>O 0-2, K<sub>2</sub>O 0-2,  
Na<sub>2</sub>O 11-16 (Li<sub>2</sub>O + K<sub>2</sub>O + Na<sub>2</sub>O 11-18), MgO 0-1, CaO 0.1-3, BaO  
0-6, ZnO 1-5 (MgO + CaO + BaO + ZnO 3-14), fluoride 0-5, and  
sulfate 0.3-0.8 weight%. The lightwt. hollow microspheres  
have d. <0.7 g/cm<sup>3</sup>, and are obtained by thermal expansion of particles of  
the soda-lime glass. The process comprises dispersing the particles in a  
gas stream, passing the loaded gas stream through flame at  
≥1500° to expand the particles and form the hollow  
microspheres, and quenching the hollow  
microspheres. The glass is obtained by elec. melting the composition  
using Mo electrodes. The hollow microspheres are  
resistant to elevated pressures, and are suitable for use in synthetic  
resins and concrete.

ST soda lime glass hollow microsphere; calcium sodium  
silicate glass microsphere

IT Glass, oxide